

HUNTON ANDREWS KURTH

HUNTON ANDREWS KURTH LLP
500 EAST MAIN STREET
SUITE 1301
NORFOLK, VIRGINIA 23510

TEL 757 • 640 • 5300
FAX 757 • 625 • 7720

ROBERT M. TATA
DIRECT DIAL: 757 • 640 • 5328
EMAIL: btata@HuntonAK.com

FILE NO: 121888.1

January 7, 2020

VIA HAND DELIVERY

The Honorable Rebecca B. Smith, Judge
United States District Court
600 Granby Street
Norfolk, VA 23510

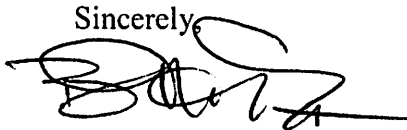
Re: Scientific Research Activities at the wreck of RMS Titanic, 2019 (2:93cv00902-RBS)

Dear Judge Smith:

We represent EYOS Expeditions Ltd. ("EYOS"). As you may recall, EYOS was authorized to conduct certain scientific activities regarding the wreck pursuant to your July 3, 2019 Order (Document 554). We write to forward EYOS's report regarding its expedition which EYOS believes addresses the points in your Order. This report was previously forwarded to NOAA, but we note your Order requires that the Court and RMST receive a copy as well. We forward it to ensure the Court and RMST have received a copy before your next status conference.

Please let us know if you have any questions or concerns.

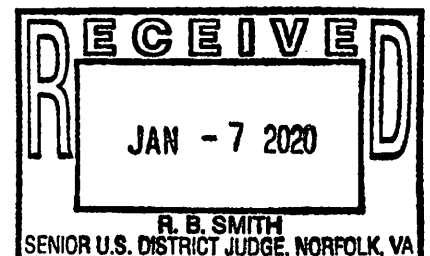
Sincerely,

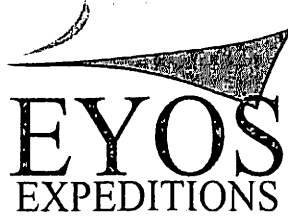


Robert M. Tata

Enclosure

cc: Jackie Rolleri (via e-mail)
David Barger (via e-mail)
Kent Porter (via e-mail)
Brian Wainger (via e-mail)





11th August 2019

Mr. David W. Alberg
Superintendent
Monitor National Marine Sanctuary
National Oceanic and Atmospheric Administration

Report on the DSSV Pressure Drop 2019 Titanic Expedition

Dear Mr. Alberg,

I am writing to present our final report on our 2019 expedition to the RMS Titanic site.

Our vessel DSSV Pressure Drop departed Bermuda on the afternoon of July 25th and arrived at the Titanic site at dawn on the 29th. After a small Remembrance Ceremony and the depositing of a wreath (organic; no metal or plastic), diving operations commenced. Dives were undertaken on the 29th, 31st, 1st, 3rd and 4th. On the evening of the 4th we departed the site for St John's and arrived on the afternoon of August 6th.

All dive operations were staged off the DSSV Pressure Drop utilizing the DSV Limiting Factor submersible. The submersible was attended by two tenders; a Mk5 zodiac for operational surface tending, and a 10m RHIB as a secondary tracking and communications center. DSSV Pressure Drop acted as primary support vessel for the purposes of tracking and communication and home to 'Mission Control'.

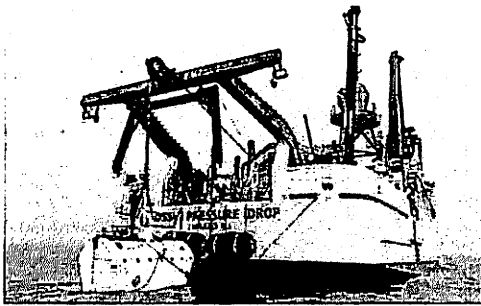


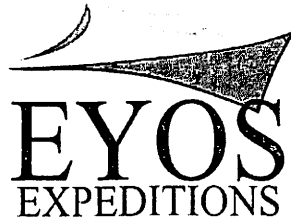
Figure 1. DSSV Pressure Drop with DSV Limiting Factor in launch position

The weather throughout the expedition was all within our operating parameters (Sea State 4) and no dives were cancelled as a result of weather. In general, the seas were a combined total (waves and swell) of 2-3.5m, with two days getting to 4m. Winds were generally 10-20kts with a low of 5kts and a height of 35kts. Heavy fog was present on two of the launches

but cleared during the day.

The dive site was found to have very strong and highly variable currents. Currents around the wreck varied between 0.5 and 2.0kts, and ran towards either 300 degrees or 120 degrees, interchanging regularly. Surface currents were similar. The current produced substantial challenges for submersible operations even for a highly maneuverable vehicle with 10 directional thrusters.

Registered Office: Knox House, 16-18 Finch Road, Douglas, Isle of Man, IM1 2PT
Incorporated in the Isle of Man - Company No. 012273V
Directors: R D McCallum, T J Soper



The key expedition staff included:

Captain	Stuart Buckle (UK)
Expedition Leader	Rob McCallum (NZ)
Submersible Team Leader	Patrick Lahey (US)
Funder/Founder	Victor Vescovo (US)
Film Director	Lina Zilinskaite (Lithuania)
Ch. Scientist	Dr. Clare Fitzsimmons (UK)
NOAA Observer	Tane Casserley

This expedition used a new system for sub-surface navigation that allowed pinpoint accuracy. The system comprises of 3 landers which serve as navigation aids on the seabed. Landers were always deployed into one of the 4 approved drop zones 'Alpha' (Bow), 'Bravo' (East), 'Charlie' (Stern) and 'Delta' (West). Typically, two landers were deployed; one in Alpha (forward of the bow) and the other at another Drop Zone on a rotating basis. For the recovery of the science trays an additional lander was deployed into Alpha to enable transportation of the science experiments back to the surface. Multiple landers allowed for very accurate range/bearing calculations, both for ensuring that the landers were only deployed into the permitted drop zones, but also for providing the submersible and the top side vessels with accurate positioning in relation to the wreck.

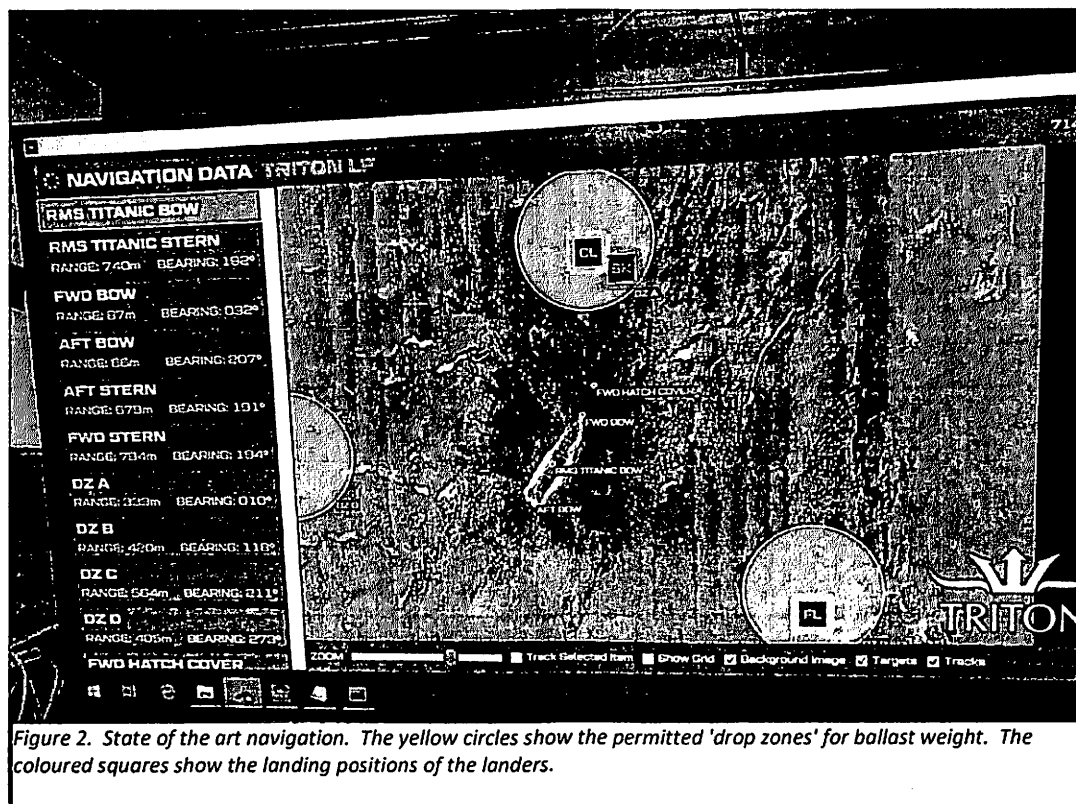
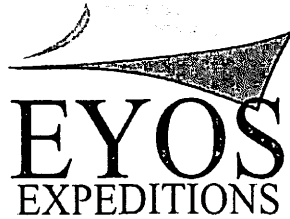


Figure 2. State of the art navigation. The yellow circles show the permitted 'drop zones' for ballast weight. The coloured squares show the landing positions of the landers.



Extreme care was used to protect the wreck, the artefacts and the overall site. However, due to the presence of the intense and highly unpredictable currents during the dive, accidental contact was occasionally made with the seafloor and on one occasion the wreck. In our assessment these interactions were of a minor nature and not material events. The submersible was neutrally buoyant (weightless) and is a fragile vehicle; there was no abnormal physical signs of damage or physical evidence of contact on the submersible.

General State of the Wreck

No trash or ballast weights were observed. Even our own ballast weights disappeared; presumably into the soft substrate. The wreck had not been visited since 2005 (an expedition I also lead) and did not appear to have changed a great deal in that time. Evidence of further natural decay was obvious in the key areas of structural collapse; the aft end of the bow section and the forward end of the officers' quarters, but no catastrophic widespread collapses were observed. It appears as though the wreck is in a continued state of gradual decline and that the inevitable collapse of deck structures has not yet begun.

One 'mystery object' was observed on the forepeak. We were not able to identify the item (it was discovered in hindsight; during the editing of film footage). In any event it is not in a location that is easily accessible to a submersible so would not be easy to recover. The item appears modern but covered in silt, suggesting it has been there for some time.

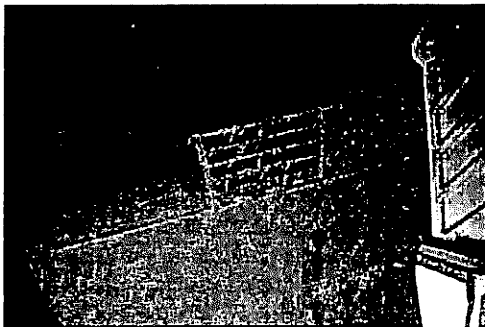
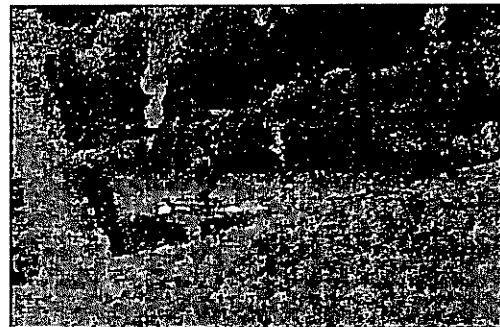


Figure 3. Small metal cylinder lying on the forepeak.



Trays

A new metallurgical sample tray was placed adjacent to the starboard hull rupture zone of the bow section. (see images)

Registered Office: Knox House, 16-18 Finch Road, Douglas, Isle of Man, IM1 2PT
 Incorporated in the Isle of Man - Company No. 012273V
 Directors: R D McCallum, T J Soper

Figure 4. Seafloor adjacent to the starboard hull burst. The specimen tray was placed on the seafloor (as requested by rusticle researchers).



Figure 4. Sample tray being placed on seafloor. It was not possible to photograph the tray in-situ as the thrusters created a 'silt-out'.

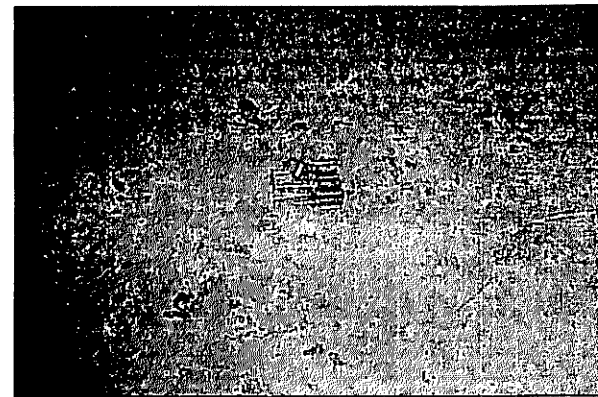
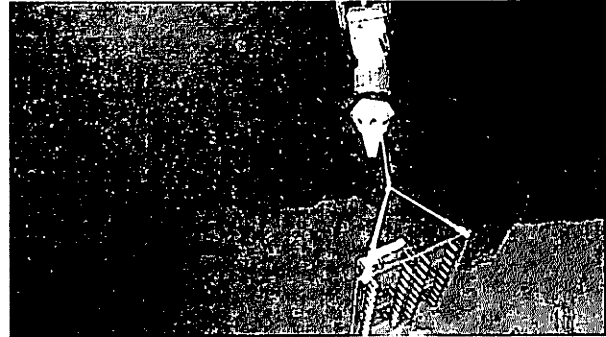


Figure 5. One sample tray was collected from the starboard side and left in Drop Zone Alpha due to a manipulator failure.

Rusticle Collection

No rusticles were collected. Our rusticle specialist, Lori Johnston, did not embark the ship due to a medical situation at home. Due to the highly perishable nature of rusticle samples (which must be examined by her within 48 hours of collection) it was decided not to attempt any rusticle collection.

Sample Tray Collection

No sample trays were recovered to the surface. One sample tray was recovered from the area adjacent to the bow section starboard side hull rupture and carried to the forward Drop Zone (Alpha). At this point the manipulator failed and the sample tray was not able to be carried to the surface. The sample remains on the seabed in Drop Zone Alpha.

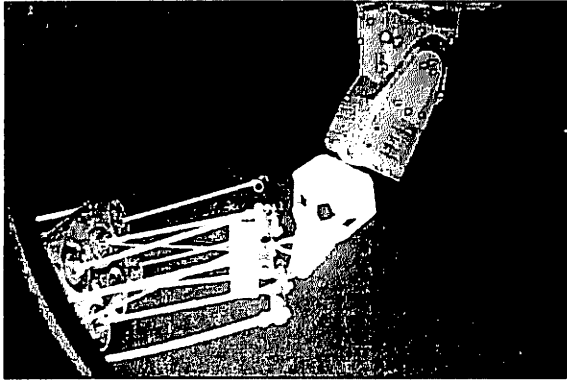


Figure 6. Sample tray being carried to Drop Zone 'Alpha'

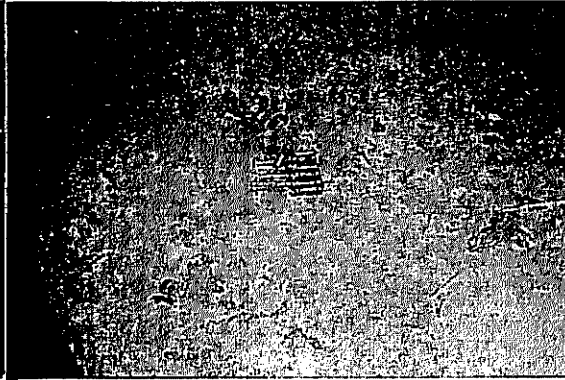


Figure 7. Sample tray abandoned in Drop Zone 'Alpha'

Filming Operations

Filming operations were conducted during each of the five dives in both HD and 4k formats. This footage was collected by Atlantic Productions for a National Geographic documentary that will illustrate the continued decay of the wreck through natural processes. The documentary will be screened in November/December. Imagery was not available for viewing by the expedition team (as a matter of policy) but we are informed the imagery of the bow section is of very high (4k) quality.

Artifacts/Disturbance

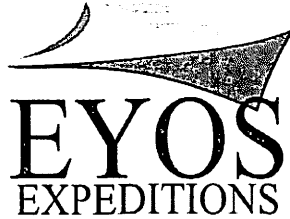
No new artifacts were observed and no artifacts were disturbed in anyway. A missing part of the structure known as 'Bulkhead K' which lies out to the far west of the site was successfully filmed for what is believed to be the first time.

Waste Discharge

Every evening the vessel would reposition outside of the Titanic exclusion zone and remain there until the commencement of dive operations next day. The only waste discharged was treated blackwater which was discharged 10-15nms away from the wreck site as per the protocol.

AIS

AIS (VHF) units were in continuous operation aboard DSSV Pressure Drop, and in operation during deployment aboard our tenders 'Response' and 'Xeno'. Several vessels were observed; mostly large commercial freighters on the US/Europe route but a Spanish speaking small (25-30m?) fishing vessel was long-lining in the area for some days. It did not respond to any of our attempts at VHF communication.



Operational Summary

The following is a list of all dives undertaken during the expedition. The landers were always deployed at the precise location we thought the current would carry them to the approved ballast drop zone. This skill is well perfected by the team having had many practice dives to 10,000m+. The day by day variability of the currents at the Titanic site made this a great challenge.

The lander ballast weights are a standard 120kgs. The submersible weights varied slightly (per the combined weight of pilot/crew) but at generally two weights, a 'Surfacing Weight' of 75kgs and a 'Freeboard Weight' of 110kgs.

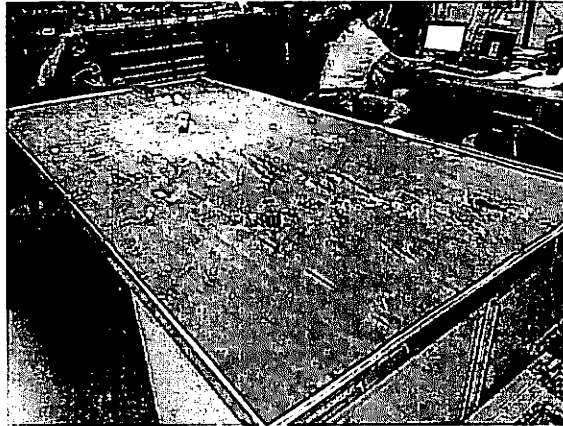


Figure 8. All dives were planned and conducted using a detailed sonar scan with 3D models in 'Mission Control'.

Dive 1. 29th July 2019

Pilot; Victor Vescovo (solo). Reconnaissance dive.

This dive went through two launch sequences. The first dive was aborted on the surface due to a technical issue. The sub was recovered, immediately repaired and relaunched.

Lander Deployment:	41.7354	-49.9452
Sub Deployment:	41.7384	-49.9506
Sub Deployment:	41.7377	-49.951
Lander Ballast Jettison:	41.7328	-49.9412
Sub Ballast Jettison:	41.7372	-49.9491
Sub Ballast Jettison:	41.7283	-49.9504
Lander Surfacing:	41.7216	-49.9419
Sub Surfacing:	41.7259	-49.952



Dive 2. 31 July 2019

Pilot; Patrick Lahey. Crew; Kelvin Magee.

Sample tray recovery (unsuccessful). Filming Operations

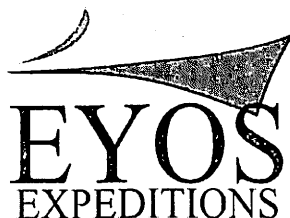
Lander Deployment:	41.4422	-49.5694
Lander Deployment:	41.4424	-49.5693
Lander Deployment:	41.4424	-49.5695
Sub Deployment:	41.4424	-49.5693
Lander Ballast Jettison:	41.7354	-49.946
Lander Ballast Jettison:	41.7353	-49.9458
Lander Ballast Jettison:	41.7352	-49.9455
Sub Ballast Jettison:	41.7353	-49.9458
Sub Surfacing:	41.7337	-49.9437
Lander Surfacing:	41.7337	-49.9437

Dive 3. 1st August 2019

Pilot; Patrick Lahey. Crew; Victor Vescovo.

Filming Operations

Lander Deployment:	41.4419	-49.5703
Lander Deployment:	41.4418	-49.5701
Sub Deployment:	41.7342	-49.9477
Lander Ballast Jettison:	41.735	-49.9451
Lander Ballast Jettison:	41.7353	-49.9402
Sub Ballast Jettison:	41.7277	-49.95
Sub Surfacing:	41.7257	-49.9495
Lander Surfacing:	41.7327	-49.9432



Dive 4. 3rd August 2019.

Pilot; Victor Vescovo. Crew; Parks Stephenson.

Filming Operations

Lander Deployment:	41.4366	-49.5718
Lander Deployment:	41.4397	-49.5735
Sub Deployment:	41.6692	-49.9422
Lander Ballast Jettison:	41.7276	-49.951
Lander Ballast Jettison:	41.7307	-49.9516
Sub Ballast Jettison:	41.7282	-49.9506
Sub Surfacing:	Not recorded.	
Lander Surfacing:	Not recorded.	

Dive 5. 4th August 2019.

Pilot; Patrick Lahey. Crew; Frank Lombardy.

Collection of research sample trays and rusticles.

Lander Deployment:	41.4333	-49.5653
Lander Deployment:	41.4426	-43.5676
Lander Deployment:	41.4425	-43.5676
Sub Deployment:	41.4432	-43.5683
Lander Ballast Jettison:	41.7376	-49.9490
Lander Ballast Jettison:	41.7285	-49.9502
Sub Ballast Jettison:	Western Drop Zone	
Sub Ballast Jettison:	Western Drop Zone	

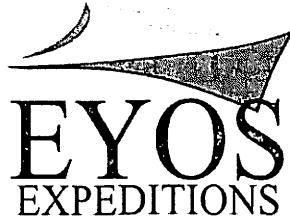
Sub Surfacing: Not recorded

Lander Surfacing: Not recorded.

Summary

This expedition was successful in completing 5 dives to the RMS Titanic over a 7 day period. Although it was not possible to recover a rusticle sample or a sample tray, it was possible to film the wreck for the first time in 14 years.

We would like to thank all of those who made this expedition possible.



A handwritten signature in black ink, appearing to be "Rob McCallum", written in a cursive style.

Rob McCallum. M.Sc. FRGS.

Expedition Leader.

EYOS Expeditions Ltd.

+1 801 390 7025

rob@eyos.com